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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/026,460 | 12/27/2001 | Il Yu | 1568.1034 | 7834 |
| 21171 | 7590 | 12/18/2003 | | |
| STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | | |
| EXAMINER KOSLOW, CAROL M | | | | |
| ART UNIT 1755 | | PAPER NUMBER | | |

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,460

Applicant(s)

YU ET AL.

Examiner

C. Melissa Koslow

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20, 22 and 23 is/are allowed.
- 6) ☒ Claim(s) 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/12/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

This action is in response to applicants' amendment of 12 November 2003. The 35 USC 112, second paragraph rejections are withdrawn due to the amendments to the claims. The objections to the specification, abstract and drawings are withdrawn due to the amendments to the specification, abstract and figure 1. Applicant's arguments with respect to the remaining rejections have been fully considered but they are not persuasive.

Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claim 21 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for producing a phosphor with a titanate host matrix having a perovskite structure which include sulfur, an alkaline earth metal and a rare earth metal where the sulfur atoms partially substitute for oxygen does not reasonably provide enablement for a phosphor with a host matrix having a perovskite structure which include sulfur, an alkaline earth metal and a rare earth metal where the sulfur atoms partially substitute for oxygen. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The specification only teaches a phosphor with a titanate host matrix having a perovskite structure which include sulfur, an alkaline earth metal and a rare earth metal. There is no other host matrix taught in the specification and there is no teaching or suggestion in the art to indicate that other alkaline earth and rare earth containing perovskites will be phosphorescent when sulfur partially substitutes for oxygen.

Applicants have argued that the statement on page 7 provides support and enablement for the production of all phosphors having a host having a perovskite structure, which includes sulfur, an alkaline earth metal and a rare earth metal. This statement simply states the invention teaches a phosphor containing S, is free of cadmium, and has good properties when compared to SrTiO_3 type phosphor. This statement does not support the claimed non-titanate based phosphors nor does it enable one of ordinary skill to produce the claimed phosphor when the host is not a titanate. $\text{CaSnO}_3\cdot\text{Tb}$ and $\text{AHfO}_2\cdot\text{Ce}$, where A is at least one alkaline earth metal, are phosphors with a host having a perovskite structure and which includes an alkaline earth metal and a rare earth metal. These phosphors have different lifespan characteristics than SrTiO_3 type phosphors. The claim includes sulfur containing versions of these phosphors, but by applicants' own arguments, they are excluded by the statement on page 7. Clearly the specification does not support nor enable all the phosphor compositions encompassed by the claim. The rejections are maintained.

Claims 1-20, 22 and 23 are allowable for the reasons given in the previous action.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (703) 308-3817. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at (703) 308-3823.

The fax number for all official communications is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661 or (703) 308-0662.

After the move to the new USPTO headquarters in Alexandria Virginia, tentatively scheduled for the week of December 22, 2003, Ms. Koslow's telephone number will be (571) 272-1371 and Mr. Bell's telephone number will be (571) 272- 1362.

cmk
December 12, 2003


C. Melissa Koslow
Primary Examiner
Tech. Center 1700